Thalassoma survey data from long-term vermetid removal reefs in Moorea, French Polynesia from 2012-2015

Website: https://www.bco-dmo.org/dataset/645908
Data Type: Other Field Results
Version: 23 May 2016
Version Date: 2016-05-23

Project
» Spatial patterns of coral-vermetid interactions: short-term effects and long-term consequences (Vermetids_Corals)

Contributors	Affiliation	Role
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Coverage

Spatial Extent: **Lat**:-17.47499 **Lon**:-149.79251
Temporal Extent: 2012-01-23 - 2015-07-09

Dataset Description

Surveys of fish in the families Scaridae and Labridae were conducted on Long Term Vermetid Removal (LTVR) Reefs 129-144 and 193-198 beginning in 2012. *Thalassoma* surveys are meant to characterize size structure of *Thalassoma* and other fish species thought to affect *Thalassoma* dynamics. We ultimately hope to use the data on size structure and numbers of *Thalassoma* to infer settlement rates, growth rates and survival.

Long Term Vermetid Removal (LTVR) Reef sites in this project are manipulated reefs characterized in the Long Term Reef Physical Characteristics dataset.

Reefs numbered 129-144, are a subset of a larger number of Long Term Reefs (LTR) that were monitored as part of the project "Cryptic density dependence: the effects of spatial, ontogenetic, and individual variation in reef fish" beginning in 2003. This long term study continues to monitor those reefs in addition to reefs 193-198 starting in 2012. Data for these reefs between the years 2003 and 2009 can be found on the project site http://www.bco-dmo.org/project/540423.

Location: Moorea, French Polynesia (17.48 degrees S, 149.82 degrees W)

Other associated LTVR datasets:
LTVR - Fate of Reefs - Contains latitude and longitude of reefs used in this dataset
LTVR - Physical Characteristics - Contains characteristics of reefs used in this dataset.

LTVR - Fish Survey
LTVR - Percent Cover Point Contact
LTVR - Percent Visual Cover
LTVR - Pomacentrids
LTVR - Vermetid Counts
LTVR - Vermetid Removal
LTVR - Vermetid Sizes in Quadrat

Methods & Sampling

Sampling and Analytical Methodology:
A single snorkeler approaches one of the 22 patch reefs (for size of reef, see Physical Characteristics dataset, each are ~ 1-8 m^2 in aerial extent) swam around it and attempted to recognize and estimate the size of all the *Thalassoma* on the reef. Large adults that were clearly attracted by the arrival of the snorkeler were ignored. We also estimated the number and size of resident *Gomphosus varius*, *Pseudocheilinus lineatus* all around the reef. Counts of small recruits of labrids and scarids were combined, excluding those three species. We also counted and identified species that we considered potential predators that were within ~ 3 meters of the reef for each patch reef. In 2012 settler counts were not completed.

Materials: Data slate with photographs of *Thalassoma* of different size classes to help with the visual estimates at each site.

Species Abbreviation Codes:

Abbreviation	Common Name	Scientific name
beb	big eye emperor	Monotaxis grandoculis
car	cardinal fish	Apogon spp.
fts	flame-tail snapper	Lutjanus fulvus
liz	lizardfish	Saurida spp.
lnf	lionfish	Pterois spp. or Dendrochirus spp.
mry	Moray	Gymnothorax spp. or Echidna spp. or Scuticaria spp.
mw	maori wrasse	Cheilinus spp.
sol	soldierfish	Myripristis spp.
sp	sand perch	Parapercis spp.
sq	squirellfish	Neoniphon spp. or Sargocentron spp.
stnf	Stonefish	Synanceia spp.
tpf	trumpetfish	Aulostomus chinensis
ydb	yellow dot bream	Gnathodentex aurolineatus
snp	snapper	Lutjanidae
carrec	cardinal fish recruit	Apogon spp.
mwj	maori wrasse juvenile	Cheilinus spp.
bebj	big eye bream juvenile	Monotaxis grandoculis
solj	soldierfish juvenile	Myripristis spp.
ydbj	yellow dot bream juvenile	Gnathodentex aurolineatus
carj	juvenile cardinal fish	Apogon spp.
oct	octopus	
spotted mry	spotted moray	Gymnothorax moringa or sp?
scorpaenid	scorpaenid	
pfr	pufferfish/puffer/puffer fish	Arothron sp
cornet fish	cornet fish	Fistularia commersonii
flounder	flounder	Canthigaster solandri or Arothon meleagris
box fish	box fish	Ostracion sp or Lactoria sp. (Ostraciidae)
bream	bream	nemipteridae
blck sq	black squirrelfish	Sargocentron spp
seabream	seabream	Acanthopargus sp? Or just Sparidae
razor fish	razor fish	Insiitstius sp
checker	checker wrasse	Rhinecanthus aculeatus
ot	octopus maybe? Orange trigger?	
blcktrig	black trigger	Melichthys sp
argus	peacock wrasse	Halichoeres argus
snowflake mry	snowflake moray	Echidna nebulosa
longface emperor	Longface emperor	Lethrinus olivaceus
clown coris	Clown coris	Coris aygula
orange trigger	Orange-lined triggerfish	Balistapus undulatus
scythe trigger	Scythe triggerfish	Sufflamen bursa

checker wrasse Checkerboard wrasse Halichoeres hortulanus
picasso Picasso triggerfish Rhinecanthus aculeatus
porcupine Porcupine fish Diodon sp
yellow anal fin snp snapper Lutjanus sp
yellow tail snp snapper Lutjanus sp
tripletail triple tail wrasse Cheilinus trilobatus
bw puffer Black and white pufferfish Arothron sp
uncertain uncertain if a settler? 2003 reefs 99, 110

Data Processing Description

Calculations: Data were entered into excel and then restructured with a macro to create the final data set. Because of this data entry method there maybe two similar entries. (e.g., if there were two fish of species or type X that were the same size (Y), they would each be on the final data sheet as Fish X, Size Y, count: 1, instead of Fish X and Y size count: 2)

NA- Not applicable (never recorded) to this data set
NR- Not recorded at certain times throughout the data set

BCO-DMO Processing Notes
- Generated from original file "LTVR_ThalassomaSurveys.csv" contributed by Rebecca Atkins
- Parameter names edited to conform to BCO-DMO naming convention found at Choosing Parameter Name
- Any blank rows removed

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Data Files

File
LTVR_ThalassomaSurveys.csv (Comma Separated Values (.csv), 33.76 KB) MD5:b2deaea2aa9f10bf255c00486e9c71fa Primary data file for dataset ID 645908

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Parameters

Parameter	Description	Units
DATE	date of data observation	DD-MMM-YYYY
Observer	name of observer (name of observer (JS-Jeff Shima)	text
Time	time of begin observation period for site	HH:MM
Reef	Number corresponding to reef ID	dimensionless
Treatment	Specifies whether or not vermetids were removed	text
Species	Species or category	text
Size	visual estimate of length	mm
Number	number of individuals of given species/length	number of individuals
No_Settlers	number of new settlers	number of individuals
Predators	Also gives ID of "other predators"; as per abbreviation codes listed below	number of individuals
Notes	free text notes corresponding to observation; site; date; etc; Also gives ID of "other predators"; as per abbreviation codes listed in Aquisition decription	text

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Instruments

Dataset-specific Instrument Name	Mask and snorkel
Generic Instrument Name	Diving Mask and Snorkel
Generic Instrument Description	A diving mask (also half mask, dive mask or scuba mask) is an item of diving equipment that allows underwater divers, including, scuba divers, free-divers, and snorkelers to see clearly underwater. Snorkel: A breathing apparatus for swimmers and surface divers that allows swimming or continuous use of a face mask without lifting the head to breathe, consisting of a tube that curves out of the mouth and extends above the surface of the water.

Dataset-specific Instrument Name	Transect Tape
Generic Instrument Name	Measuring Tape
Dataset-specific Description	Materials: transect tape and slates
Generic Instrument Description	A tape measure or measuring tape is a flexible ruler. It consists of a ribbon of cloth, plastic, fibre glass, or metal strip with linear-measurement markings. It is a common tool for measuring distance or length.

Dataset-specific Instrument Name	Slate
Generic Instrument Name	Underwater Writing Slate
Dataset-specific Description	Materials: transect tape and slates
Generic Instrument Description	Underwater writing slates and pencils are used to transport pre-dive plans underwater, to record facts whilst underwater and to aid communication with other divers.

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Deployments

Osenberg_et_al_Moorea

Website	https://www.bco-dmo.org/deployment/644752
Platform	Osenberg et al Moorea
Start Date	2003-05-19
End Date	2015-07-12

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Project Information

Spatial patterns of coral-vermetid interactions: short-term effects and long-term consequences (Vermetids_Corals)

Coverage: Moorea, French Polynesia (-17.48 degrees S, -149.82 degrees W)

Description from NSF abstract:
Ecological surprises are most likely to be manifest in diverse communities where many interactions remain uninvestigated. Coral reefs harbor much of the world's biodiversity, and recent studies by the investigators suggest that one overlooked, but potentially important, biological interaction involves vermetid gastropods. Vermetid gastropods are nonmobile, tube-building snails that feed via an extensive mucus net. Vermetids reduce coral growth by up to 80%, and coral survival by as much as 60%. Because effects vary among coral taxa, vermetids may substantially alter the structure of coral communities as well as the community of fishes and invertebrates that inhabit the coral reef.

The investigators will conduct a suite of experimental and observational studies that: 1) quantify the effects of four species of vermetids across coral species to assess if species effects and responses are concordant or idiosyncratic; 2) use meta-analysis to compare effects of vermetids relative to other coral stressors and determine the factors that influence variation in coral responses; 3) determine the role of coral commensals that inhabit the branching coral, Pocillopora, and evaluate how the development of the commensal assemblage modifies the deleterious effects of vermetids; 4) determine how vermetid mucus nets affect the local environment of corals and evaluate several hypotheses about proposed mechanisms; and 5) assess the long-term implications of vermetids on coral communities and the fishes and invertebrates that depend on the coral.

Note: The Principal Investigator, Dr. Craig W. Osenberg, was at the University of Florida at the time the NSF award was granted. Dr. Osenberg moved to the University of Georgia during the summer of 2014 (current contact information).

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Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-1130359

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